

Spike in water toxins leading to dead turtles washing up on LI shores, scientists say

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Hundreds of small turtles have washed up dead on the eastern end of Long Island in the last month, a die-off scientists blame on waterborne toxins that have reached unprecedented levels for reasons that aren't entirely clear.

Necropsies on some of the more than 200 diamondback terrapins found on the island's North Fork point to saxitoxin, a biotoxin produced in algae blooms that has been found in the water at 10 times the normal level. The poison collects in shellfish, which are eaten by the turtles in brackish bays and estuaries, quickly causing paralysis and death.

"We're seeing bodies washing up in perfect condition. This has never happened before. It's an alarming thing," said Karen Testa, executive director of Turtle Rescue of the Hamptons, whose volunteers have collected dozens of the dead turtles and sent them to state officials for analysis.

She says all signs point to saxitoxin.

"There's no other explanation for what's causing the die-off of these poor animals," she said. "It's a horrible way to go."

Christopher Gobler, a professor at Stony Brook University's School of Marine and Atmospheric Sciences who has studied algal blooms off Long Island for more than 20 years, said saxitoxin is normally detected in the region's waters, but he has never seen saxitoxin this high and never seen it cause such a wildlife die-off.

Red algae blooms produce the saxitoxin, which state officials have called a "dangerous neurotoxin" that can damage or impair nerve tissue. Shellfish filter the toxic algae cells from the water and when other creatures chomp down on the shellfish, they can become paralyzed.

Saxitoxin can also cause paralytic shellfish poisoning in humans, which typically results in numbness and tightening in the face and a loss of coordination. In most cases, patients make a full recovery in a few days, but rare cases have resulted in death.

The Centers for Disease Control and Prevention estimates that 30 cases of poisoning by marine toxins are reported each year, but officials have been unable to pinpoint a precise number

because there is no requirement that health care providers report the illnesses. The CDC says an average of one person dies every four years from toxic seafood poisoning.

Suffolk County has never had a reported case of illness or death related to saxitoxin, Assistant Deputy County Executive Justin Meyers said. However, he said there is a "long-term potential threat to public health" if the saxitoxin levels continue to rise.

Meyers said county and state officials had advised people not to consume shellfish from the area and enacted a shellfishing ban for three creeks and bays. The county health department also advised against swimming in discolored water.

A spokesman for the New York State Department of Environmental Conservation, which runs a marine toxin monitoring program and sent representatives to collect the deceased turtles, said all signs from initial necropsies point toward saxitoxin, but the agency is sending the turtle's organs for further testing. Those results won't be available for several weeks.

"This is a serious threat to public health," said Adrienne Esposito, executive director of the Citizen's Campaign for the Environment. "It's not a joke anymore. When you have a saxitoxin that can kill humans, you need to address the cause."

Gobler and Esposito both believe the increase in saxitoxin levels may be related to nitrogen in the water caused by leaking septic tanks and sewage that makes its way into bays, though there appears to be no explanation for why the levels are now higher than ever before.

Meyers said the county has developed a plan to reduce nitrogen pollution, including acquiring \$400 million in state and federal grants to improve wastewater infrastructure. The county also is trying to convert 360,000 homes from having cesspools to using municipal sewers.

Experts say the damage already done to the eastern Long Island turtle population, coming during the breeding and egg-laying season, could have long-term consequences.

"We've seen very few instances like this before," said Dr. Russell Burke, the chairman of the biology department at Hofstra University, who also studies turtles on Long Island. "It can take decades to recover."

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